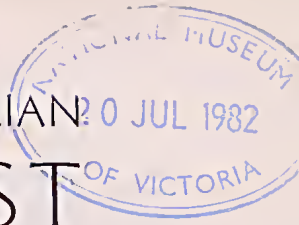


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EJAH BREAKAWAYS, MILEURA, CUE, AS AN ABORIGINAL HOME

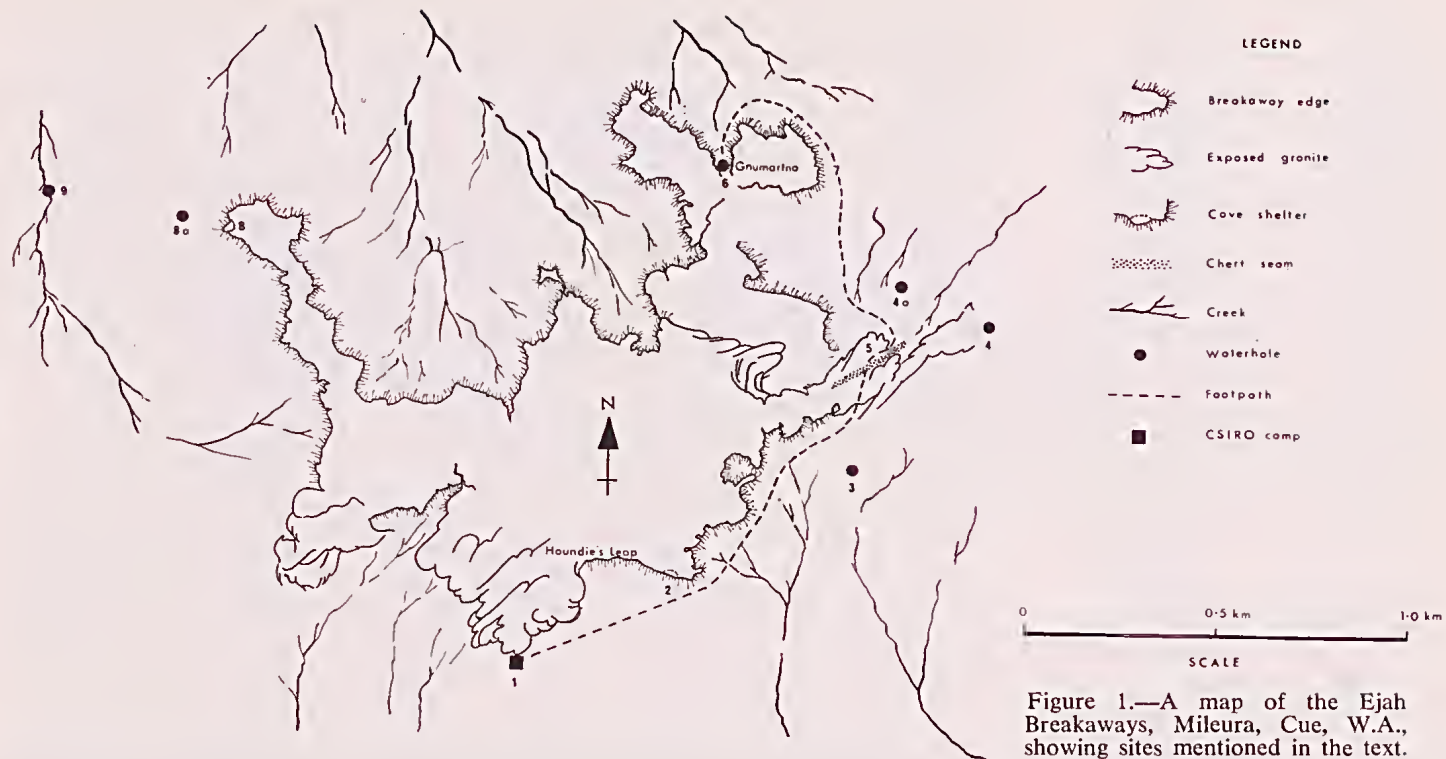
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INTRODUCTION

Davies (1961) described a number of Aboriginal sites in the Murchison District of Western Australia, one of which was the Gnumartna Rock Hole (Lat. 26°22'S; Long. 117°18'E). This site is a gully running into the Ejah Breakaways, a rocky outcrop at the headwaters of one of the tributaries of the Pindebarn Creek, which itself drains into the Murchison River. During the past sixteen years we have spent many weeks at the CSIRO Division of Wildlife Research Field Station on these breakaways, and have learnt to come to terms with the environment there under different seasonal conditions. In the course of these years we have been impressed to find that almost everything that we do, every track we take, every lookout we use, everywhere we recognise as a shelter, has evidence of prior use by Aboriginal people. It is perhaps not surprising that this is so for we are conspecific with the Aborigines and the behaviour of animal species contains many species specific elements and patterns. By living under field conditions we are forcing ourselves to meet the same problems of comfort and concealment, movement and location as did the Aboriginal people before the advent of European man. The environment seems to have changed little, and the fact that we have often come to the same solutions to problems as previous inhabitants of the area might have been expected. However the realization of this common experience has prompted us to speculate on the use Aborigines made of the Ejah Breakaways. This paper is, then, an analogue synthesis of Ejah as a habitat for men, an account of the best solutions we have found to the problems the environment poses. As such it can prove no theories. It records facts, correlations and experiences, and may perhaps be useful if it stimulates predictions that themselves lead to the discovery of new facts in the form of sites that can be excavated and analysed.

There is little contemporary record of the use made by Aboriginal people of Ejah. It is clear that it was used by people of the Wadjari tribe and that Gnumartna Rock Hole and its carvings were of some sacred or ceremonial significance. The name, Ejah, is an expression of surprise as 'oh' or 'ah' are in English. We have met no living people who witnessed Aboriginal occupation of Ejah. Figure 1 is a sketch map of the breakaways and Plate 1 shows portion of the southern face.

Excavations reported in this paper were made prior to December 1972. Subsequently the Western Australian Aboriginal Heritage Commission has issued a permit for the continuance of such exploratory archaeological work on Mileura and we are grateful to Mr. B. Wright of the Western Australian Museum for his advice and help in this regard. Dr. W. Bray of the Institute of Archaeology, London, kindly advised us on radio-carbon dating methods.



RESULTS

1. CSIRO Camp, Ejah (Figure 1, 1)

The camp is located on the southern edge of a sloping granite outcrop, not far from the breakaway scarp known as Houndie's Leap, after a spaniel that followed a fleeing rabbit over the drop. Ejah had some obvious advantages for a base camp. It was centrally placed in the study area, Mileura Pastoral Lease, roughly defined by the watershed of the Pindebarn Creek. Ejah lies midway between the north and south ends of the lease, but is close to the western boundary. A main road close to Ejah makes access to the eastern side easy. This road runs eastward straight to the shearing shed and homestead in the middle of the lease, where it meets good roads running to all parts of the station, but the site was still far enough away from the homestead (15 km) to ensure that the surrounding countryside received minimal disturbance during stock management practices. The outlook was attractive and a good stand of tall *Acacia adsurgens* trees provided shade. The sloping granite north of the site not only sheltered it from the direction of prevailing storm winds and rain (the north-east in both summer and winter) but was a natural water catchment on which pools formed after rain. The surrounding breakaways provided numerous lookouts from which emus could be watched on the plains below. Because of its elevated position, the site was easy to locate during excursions on foot or vehicle into the surrounding countryside. Subsequently it was discovered that the site had two other advantages over a site by the main creek, which would have been a more conventional choice. First the blood-sucking Diptera were fewer there than in the creek, an important factor in an area where arthropod-borne virus diseases have been seen to



Plate 1.—The Houndie's Leap rock shelter from the south. The rock shelter is partly exposed on the right of the plate, and continues behind the boulder in the centre of the plate. To the left the roof of the shelter dips sharply, and the shelter is effectively unusable by man.

decimate the avifauna and where cyclones could conceivably bring down from the north not only viruses lethal to birds but ones lethal to man as well. Secondly the temperature relations of the area mean that the highlands such as Ejah are cooler in summer and warmer in winter than the main creek beds (Davies, 1973).

2. Houndie's Leap rock shelter (Figure 1, 2)

The site is a typical breakaway rock shelter (Plate 1), about 3 metres deep, 7 metres long and 2 metres high. The rock floor is covered with approximately 30 cm of soil and debris and is now used as a shelter by Euros (*Macropus robustus*), Goats (*Capra hircus*) and many nesting and roosting birds. The entrance faces south and is about 10 metres above the level of the plain below. It gives almost exactly the same attractive prospect and degree of shelter from prevailing weather as does the CSIRO campsite, yet we were unaware of this rock shelter when we chose our own campsite. The rear walls of the shelter were decorated with a few disintegrating hand stencils in red ochre in 1961, but these have now disappeared. Excavation through the soil and debris on the floor has revealed three levels of hearths. Charcoal from the lowest of these, at the level of the rock floor, has been estimated as dating from 660 A.D. \pm 100 years by the C¹⁴ method (RL 513). This result has some interesting implications.

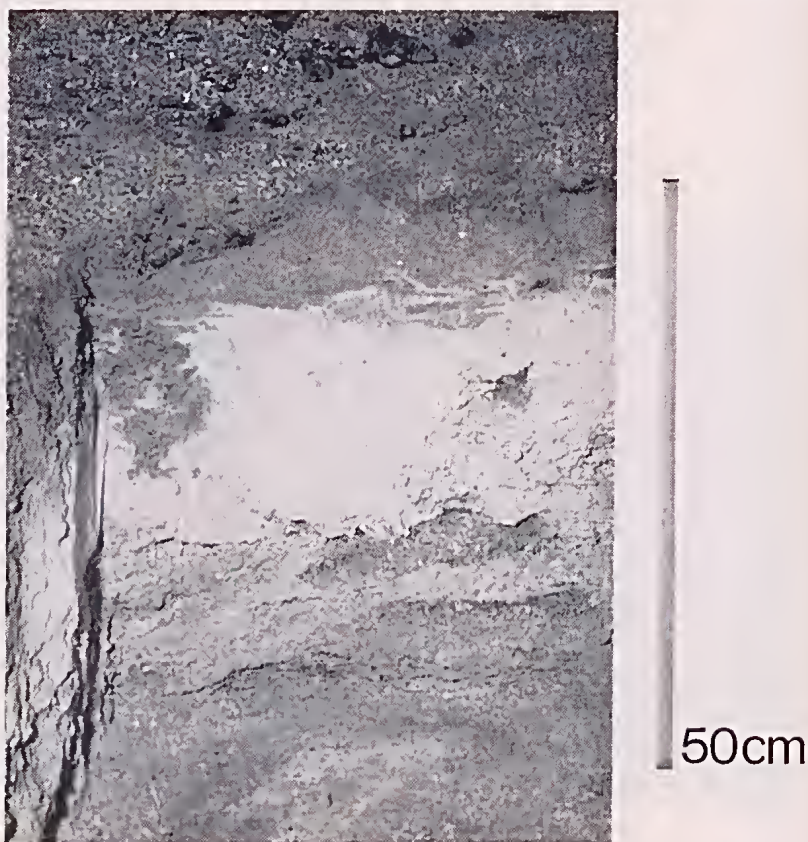


Plate 2.—A section through the floor of the Houndie's Leap rock shelter, showing the three hearth layers.

but in mentioning them it is as well to recognize that the dating method merely fixes the time at which the carbon was incorporated into the wood that made the charcoal. It tells us nothing of the time the tree stood, alive or dead, before it was used as fuel for an Aboriginal fire. Nonetheless it seems reasonable to suggest that the site has been used for over 1,000 years, and that the landscape, in particular the breakaway edge, has changed little in that time. Immediately above this lowest hearth layer is a layer of granite detritus, 3 cm deep, and then another hearth layer. Above this second layer is a layer of large rocks, 5-10 cm in diameter, which have obviously fallen from the roof of the shelter as part of a considerable rock fall. The layer is about 12 cm deep and above it lies another hearth layer. A layer of dusty soil of variable width separates the upper hearth layer from the disturbed recent detritus layer. Plate 2 illustrates a section through the cave floor exposed by the excavations. There seems to be little doubt that the Aborigines used this as a dwelling and the abundance of worked pebbles on the plain below the shelter is evidence in support of this view.

3. Houndie's Leap Gnamma Hole

There is a bowl-shaped depression in a superficial granite slab about 1 km east of the Houndie's Leap shelter. It holds water after rain and could have served as a well. The diameter of the surface hole is 20 cm, the chamber was 125 cm deep and opened out to a maximum width of 230 cm. Excavation of the detritus in the hole did not reveal any artifacts, but the rock around the hole was worn in the position where one would kneel to take water from the hole. It is the nearest significant rock hole to the cave shelter and lies on a path route from it around the breakaway to Gnumartna.



Plate 3.—Stone arrangements on the north-western side of Ejah Break-aways. Notice that the arrangement correlates visually with the three hills in the middle distance.

4. Covered well (Figure 1, 4)

About a kilometre further round the edge of the breakaway there is a rock hole in a large granite slope which is covered by three slab stones that were still in place when the site was found in 1975. The well holds water for most of the year and the cavity is 50 cm in diameter x 120 cm deep. This well is off the direct path from Houndie's Leap Cave to Gnumartna.

5. Stone arrangements (Figure 1, 4a)

Near the covered well there are three piles of stones; no natural process could be conceived that would have produced such an arrangement, but there are no associated worked artifacts. They are illustrated in Plate 3, which shows that, from a particular position they line up perfectly with three rises in the middle distance. If we wish to describe aspects of the countryside we draw a mud map. These rock piles are more permanent than a mud map, but could have served the Aborigines as a permanent visual aid for describing features of the countryside from this point. Davies (1961) has mentioned incised 'maps' near Gnumartna Rock Hole that were said to have served this purpose.

6. Gnumartna Rock Hole (Figure 1, 6)

No new information has been obtained from this site which is described by Davies (1961). It is, however, weathering badly in places and many of the stencilled hands that were visible in 1959 are no longer clear. A detailed series of photographs of the decoration of the site as it was in 1960 have been deposited in the Western Australian Museum.

7. The path

The path around the edge of the breakaways goes directly from the Houndie's Leap rock shelter to Gnumartna rock hole along a course that we have found is the best compromise between ease and directness. It is used by many animals as well as ourselves, especially Euros, Goats, Sheep (*Ovis aries*) and Rabbits (*Oryctolagus cuniculus*). It crosses a dyke of a chert-like material (5 in Figure 1), chipped pieces of which are frequently found around the breakaway, and which seems to be the most suitable local stone for the preparation of stone tools.

8. The north-west rock shelter (Figure 1, 8)

This cave is more than 20 m deep, and unlike the Houndie's Leap shelter is concealed behind a thin granite screen, although it is also formed by erosion under a laterite cap. It has not been extensively explored, but seems likely to have been a shelter, or perhaps a watch-tower, for it overlooks an important water hole. There are traces of soot on the roof.

9. The north-west water hole (Figure 1, 9)

This pool is in a deep granite depression in a creek bed, and although no careful records have been kept of its permanence it has many tracks converging onto it and appears to be at least as important to the animals of the area as Gnumartna. At both water holes the scrapes made by kangaroos seeking water provide drinking points for other animals and birds when the surface water has evaporated. It is almost certain to have been used by Aboriginal man as well, and when full is about 50 cm deep. Between it and the north-west rock shelter there is a pattern of stones laid out adjacent to the pile of granite boulders closest to the shelter (8a on Figure 1).

10. Extra-limital sites

(a) Milly factory

This is a stone working site on a diorite dyke cutting across Milly breakaways 18 km south of Ejah and readily visible from it. Milly breakaways form the south side of the valley of which the Ejah breakaways

are the north. The diorite dyke is exposed for about 1 km and appears to be about 1 m wide, although its width varies and the broken, superficial rock is scattered over a greater width than a metre. Throughout its length worked cores can be found, as well as discarded and possibly imperfect stone tools.

(b) Cattle camp pool

The remains of the shelters of an old mustering camp lie beside a pool in a creek 6 km S.E. of Houndie's Leap shelter. Although this camp was undoubtedly used by European man the stream bed and bank contain numerous worked rocks and suggest that the Aborigines used the site long before European man reached the area. Possibly, as stockmen in his employ, they sited their muster camp on a traditional site. The pool holds water for several weeks after the winter rains and makes the site an attractive location at that time of year. No excavations have yet been carried out at this site.

(c) Yarrameedie Gallery

This site is described by Davies (1961) and lies 20 km north of Ejah. The Yarrameedie Range is a striking backdrop to the view north from Ejah and intrudes onto the horizon in most outlooks from the north side of the breakaways. The large and permanent Poonthoon Pool lies to the south of the range, east of the gallery, and must have been the summer refuge after the rock holes of the hills had dried out. Poonthoon provides a backstop to life at Ejah, where the rock holes cannot be relied upon to last through long dry periods.

DISCUSSION

Detailed examination of the Ejah breakaways show that they provide sufficient water and shelter to support human life for most of the year, and that they are conveniently placed within walking distance of other sites apparently important to Aborigines. There are Euros around the breakaways which could provide food, and no doubt much other food was available for people with traditional knowledge. The extensive carvings and paintings of Gnumartna confirm that it was much used by the Wadjari tribe and our experience suggests that it could have been a permanent base for the surrounding countryside from which its inhabitants need only have retreated in very long dry spells.

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THE WANDERER BUTTERFLY AT BUNBURY AND OTHER PARTS OF THE SOUTH-WEST, AND A NEW FOOD PLANT

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Populations of the Wanderer butterfly (*Danaus plexippus*) were discovered near Perth in the late sixties (Koch, 1971, 1973a and 1973b; Dell, 1974). In recent years, the Wanderer has also become abundant in the lower South-West, particularly the Bunbury area, where its breeding places have been found.

Since January 1976, the Wanderer has appeared more abundantly than in previous years around Perth; there have been numerous sightings